

PATENT ABSTRACTS OF JAPAN

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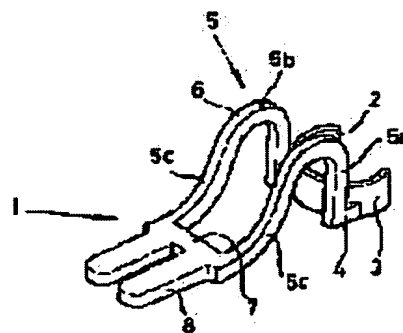
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(54) URGING SPRING MEMBER WITH TRIGGER OF TRIGGER TYPE LIQUID EJECTOR

(57)Abstract:

PROBLEM TO BE SOLVED: To urge a plunger forward through a trigger by protruding spring plates which bend vertically from an elastic semi-cylindrical holding plate in which a rear part is opened in a C-shape in a plane view forward in parallel in the plane view at proper intervals and molding the entire body with an elastic synthetic resin integrally.

SOLUTION: Each base part 5a of a spring plate 5 is erected from both right and left sides of an elastic semicylindrical holding plate 3 in which a rear part is opened 2 in a C-shape in a plane view through a forward protruded rod part 4, and each intermediate part 5b of the plate 5 extending from both base parts 5a is formed in a pair of large curved parts 6 extending upper-forward. Moreover, each spring plate end 5c is protruded with an upper surface slightly curved in a recessed shape lower-forward from the ends of both curved parts 6, both spring plate ends 5c are connected by an interval holding plate 7, a pair of blocking plates 8 for trigger-blocking is protruded forward from the front of the plate 7, and the entire body is molded integrally with an elastic synthetic resin.



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CLAIMS

[Claim(s)]

[Claim 1] The spring member for trigger energization of the trigger type liquid blowout machine which separates a suitable gap for the leaves 5 and 5 crooked up and down from the elastic half tubed maintenance plate 3 which makes the back the shape of a plane view C typeface opening 2, and is characterized by really fabricating a front projection and the whole by the synthetic-resin material which is rich in elasticity to plane view **** parallel.

[Claim 2] While setting up base 5a of leaves 5 and 5, and 5a through the front projection rod parts 4 and 4 from the right-and-left both sides of an elastic half tubed pinching plate 3 front-wall part The leaf pars intermedia 5b and 5b which extends from both bases, such as this, is formed in the curvatura-ventriculi-mojor pars convoluta lobuli corticalis renis 6 and 6 jutted out to the method of the kickback.

Furthermore, by carrying out the gryposis of the top face to a concave somewhat to the method of Shitamae from both curvatura-ventriculi-mojor pars-convoluta-lobuli-corticalis-renis heads, such as this, while connecting between both the leaves front end, such as a projection and it, with the spacing plate 7, the leaf points 5c and 5c The spring member for trigger energization of the trigger type liquid blowout machine according to claim 1 characterized by carrying out front projection of the engagement plate 8 for trigger engagement from spacing plate 7 front face of this.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]

[0002]

[Description of the Prior Art] A trigger-type liquid blowout machine stands up a vertical cylinder from the inside of the wearing cylinder upper part which generally carries out fitting to a top neck part of the bottle object. this vertical cylinder upper bed to a injection cylinder -- and pars intermedia to a cylinder - - respectively -- a front projection -- At the upper part back of the trigger installed from the above-mentioned injection cylinder anterior part rockable to the cross direction It has prepared so that the plunger front end section which was made to carry out front energization and carried out fitting into the above-mentioned cylinder may be stopped, and the liquid in a bottle object may be absorbed into a cylinder by splash actuation of a trigger and this liquid in a cylinder may be spouted from the nozzle of the injection cylinder front end.

[0003] Front energization of the above-mentioned plunger had gone by the metal coil spring with which it was made to equip into a cylinder conventionally.

[0004]

[Problem(s) to be Solved by the Invention] Although re-utilizing with buildup of trash recently, using trash as a resource is called for, generally, the article is formed combining two or more members which differ in construction material, and since such an article is difficult to decompose for every construction material, the re-activity as a resource is difficult for it.

[0005] In the case of the above-mentioned liquid blowout machine, members other than a coil spring are fabricated by synthetic-resin material except for the ball of the ball valve used for an inlet valve and a discharge valve, and since valves other than a ball valve are well-known, both the above-mentioned valves also run short of elasticity with a metal and synthetic resin as it is in a metal coil spring, the product made of synthetic resin, then since a remarkable difference is in elasticity, although it must be good.

[0006] This invention is replaced with the coil spring which made it equip in a cylinder conventionally and carried out front energization of the direct plunger, a trigger and a plunger are connected, it is carrying out front energization of the plunger through a trigger, and the spring member made of synthetic resin which has the almost same front energization force as usual is obtained.

[0007]

[Means for Solving the Problem] As the 1st means, the suitable gap was separated for the leaves 5 and 5 crooked up and down from the elastic half tubed maintenance plate 3 which makes the back the shape of a plane view C typeface opening 2, and a front projection and the whole were really fabricated by the synthetic-resin material which is rich at elasticity to plane view **** parallel.

[0008] While having the 1st means of the above and setting up base 5a of leaves 5 and 5, and 5a through the front projection rod parts 4 and 4 as the 2nd means from the right-and-left both sides of an elastic half tubed pinching plate 3 front-wall part The leaf pars intermedia 5b and 5b which extends from both

bases, such as this, is formed in the curvatura-ventriculi-mojor pars convoluta lobuli corticalis renis 6 and 6 jutted out to the method of the kickback, the gryposis of the top face is further carried out to a concave somewhat to the method of Shitamae from both curvatura-ventriculi-mojor pars-convoluta-lobuli-corticalis-renis heads, such as this, and they are the leaf heads 5c and 5c A projection and [0009] Moreover, while connecting between both the leaves front end, such as it, with the spacing plate 7, front projection of the engagement plate 8 for trigger engagement was carried out from spacing plate 7 front face of this.

[0010]

[Embodiment of the Invention] 1 shows the whole spring member for trigger energization of the trigger type liquid blowout machine concerning this invention. This spring member has the elastic half tubed maintenance plate 3 which sees at a flat surface and makes the back the shape of a C typeface opening 2, as drawing 1 shows. This half-tubed maintenance plate is what carries out fitting to the vertical cylinder 35 first-portion outside surface between the cylinder 27 of a trigger type liquid blowout machine, and the injection cylinder 26, as drawing 2 shows. The horizontal width of the opening 2 is somewhat briefer than the outer diameter of the vertical cylinder 35, that is, the opening is applied to a vertical cylinder outside surface, and it prepares so that elastic deformation of the half-tubed maintenance plate 3 may be carried out by pushing against the vertical cylinder 35 as it is and it can fit in to the first portion outside surface of the vertical cylinder 35.

[0011] From the right-and-left both sides of the above-mentioned half tubed maintenance plate 3 front-wall part The bases 5a and 5a of leaves 5 and 5 are stood up upwards through the front projection rod parts 4 and 4. Moreover, the leaf pars intermedia 5b and 5b which extends from both bases, such as this, is formed in the curvatura-ventriculi-mojor pars convoluta lobuli corticalis renis 6 and 6 jutted out to the method of the kickback. Furthermore, the gryposis of some is carried out, between leaf heads, such as a projection and it, is connected for the leaf points 5c and 5c with the spacing plate 7 so that a top face may serve as a concave from the head of both curvatura-ventriculi-mojor pars convoluta lobuli corticalis renis, such as this, to the method of Shitamae, and the engagement plate 8 for trigger engagement is projected from this front face of a spacing plate to the front.

[0012] The gap between what sees at a flat surface and carries out front projection mostly at parallel, nothing, and its leaf forms leaves 5 and 5 possible [loose insertion of the injection cylinder 26 of a trigger type liquid blowout machine] in between the curvatura-ventriculi-mojor pars convoluta lobuli corticalis renis 6 and 6, as drawing 2 shows. Moreover, the above-mentioned engagement plate 8 makes a stop possible to the upper part back of a trigger 32, and is trigger front wall 32a. Side-attachment-wall 32b which carries out a back protrusion from right-and-left both sides, and 32b Suppose that it is possible to carry out fitting in between. In addition, although the engagement plate 8 is projected and formed in 2 parallel in the example of a graphic display from the right-and-left both sides of spacing plate 7 front face, even if it forms with a plank, it does not interfere.

[0013] if leaves 5 and 5 have suitable reinforcement -- the above-mentioned spacing plate and an engagement plate -- you may omit -- moreover -- a half -- the leaf configuration which projects from a tubed maintenance plate can also be changed suitably.

[0014] Drawing 2 shows the trigger type liquid blowout machine made to equip with the previous statement spring member 1. If this liquid blowout machine is explained briefly, 21 carries out screwing etc. to a top neck part of the bottle object, and the wearing cylinder which carries out fitting, and 22 will be the body anchoring members of a blowout machine which stand up from the up inner surface of the wearing cylinder, and will stand up the vertical cylinder 23 while carrying out fitting to a vertical-outside body of blowout machine cylinder inner surface.

[0015] 24 is a body of a blowout machine and the cylinder 27 projects [the injection cylinder 26 from outside vertical cylinder 25 upper bed which carried out fitting to the vertical cylinder outside surface in the above] from the outside vertical cylinder lower part to the front again, respectively. Fitting of the nozzle head mounting cylinder 28 is carried out to injection cylinder 26 anterior part, and fitting of the nozzle head 29 with nozzle hole 30 is carried out to this mounting cylinder anterior part. The **** nozzle head 29 has the member 31 with a cover plate which opens and closes the nozzle hole 30.

[0016] The trigger 32 makes it have hung to the method of slanting Shitamae free, and the splash to a cross direction is making plunger 33 anterior part which is made to carry out fitting of the back and carries out front projection into the above-mentioned cylinder pivot in the upper part back of a **** trigger from injection cylinder 26 anterior part.

[0017] It is made to equip with the valve portion material 36 in the vertical cylinder 35 formed in the inside-and-outside double cylinder. In the inlet valve object 38, this valve portion material stands up the engagement rod 39 from a flat-spring upper bed again to flat-spring 37 soffit which follows a corrugated plate cross-section configuration in a flexion. It is what stood up the discharge valve object 40 as an elastic reverse skirt-board-like cylinder to the method of the outside of a top through this engagement rod lower part to the outward-flange-like wall, and was really fabricated by synthetic-resin material. It passes inlet valve seat 41, and the pressure welding of the engagement rod 39 upper bed is carried out for a vertical cylinder top face, respectively to upper wall 42 underside which established inlet valve object 38 underside in the lower inner surface of the vertical cylinder 35 and to blockade.

[0018] The spring member 1 of this invention is stopped into the crevice 43 of rear-face opening which the vertical cylinder 35 which inside-and-outside both the vertical cylinder forms made carry out fitting of the elastic half tubed maintenance plate 3 to a part for the first portion of a cylinder 27 and the gap part which it has between the injection cylinders 26, made carry out front projection of the leaves 5 and 5, and prepared in the up rear face of a trigger 32. It sets for the example of a graphic display, and this crevice is trigger front wall 32a. Side-attachment-wall 32b which carried out back projection from the right-and-left both sides of this front wall, and 32b It forms with the up-and-down ribs 44 and 44 installed horizontally among side attachment walls, such as it.

[0019] If a trigger 32 is drawn near from the condition which drawing 2 shows, the liquid which entered in the vertical cylinder 35 through the bore 45 prepared in the cylinder posterior wall of stomach by high voltage-ization in a cylinder 27 will enter into the injection cylinder 26 by carrying out elastic deformation of the discharge valve object 40, and will be spouted from the nozzle hole 30. When a trigger 32 is detached, a trigger 32 and a plunger 33 will revert to the original location by restoration of leaves 5 and 5. Since the elastic discharge valve object 40 carried out the pressure welding of that upper bed periphery section to vertical cylinder 35 inner surface by high voltage condition dissolution at this time and the discharge valve is closed, The inside of a cylinder 27 will be negative-pressure-ized, and the inlet valve object 38 which blockades the inlet valve hole by this negative pressure-ization is resisted and made the elasticity of a medium leaf. Then, it sucks up, and through a pipe 46, the liquid in a bottle object enters into a cylinder 27, and prepares for the liquid blowout by next trigger ***** actuation.

[0020]

[Effect of the Invention] This invention is what is considered as a previous statement configuration. A spring member according to claim 1 Since it has the elastic half tubed maintenance plate 3 which sees at a flat surface and makes the back the shape of a C typeface opening 2 The opening 2 is applied for this half-tubed maintenance plate to vertical cylinder 35 outside surface of a trigger type liquid blowout machine. The half-tubed maintenance plate 3 can carry out elastic deformation only by pushing then, and fitting can be carried out to vertical cylinder 35 outside surface. Moreover, since the gap was separated suitably, it saw at the flat surface and front projection was carried out mostly at parallel, the leaves 5 and 5 crooked up and down from the half-tubed maintenance plate 3 It can be made to stop into the crevice 43 which was made to insert the injection cylinder 26 into the gap of the leaves 5 and 5, and prepared the leaf front end in the up rear face of a trigger 32. Thus, in spite of having formed the spring member 1 by synthetic-resin material, front energization of the plunger 33 can be carried out through a trigger 32 by making the die length of leaves 5 and 5, and elasticity into size.

[0021] While a spring member according to claim 2 combines and has the effectiveness which the spring member of the claim 1 above-mentioned publication has From the right-and-left both sides of the front wall part of the above-mentioned half tubed pinching plate 3, the leaf bases 5a and 5a are set up through the front projection rod parts 4 and 4. The leaf pars intermedia 5b and 5b which extends from both bases, such as this, to the curvatura-ventriculi-mojor pars convoluta lobuli corticalis renis 6 and 6 jutted out to the method of the kickback Furthermore, since the gryposis of some top faces was carried out

from this curvatura-ventriculi-mojor pars-convoluta-lobuli-corticalis-renis head and the leaf points 5c and 5c were projected The possible elasticity of leaves 5 and 5 carrying out elastic deformation of the whole almost uniformly by trigger *****, and carrying out front energization of the plunger 33 through a trigger 32 is acquired easily. Moreover, since the engagement plate 8 for trigger engagement was projected from this front face of a spacing plate while connecting between the leaf front end with the spacing plate 7, elastic deformation of both the leaves 5 and 5 will always be carried out simultaneously, and they can also perform easily wearing of the spring member 1 to a trigger type liquid blowout machine while they raise the elasticity.

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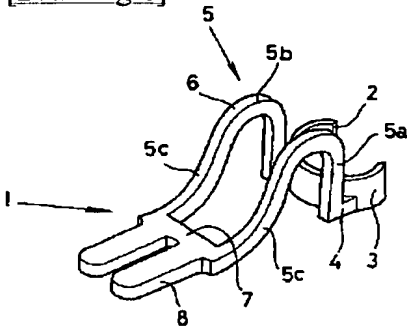
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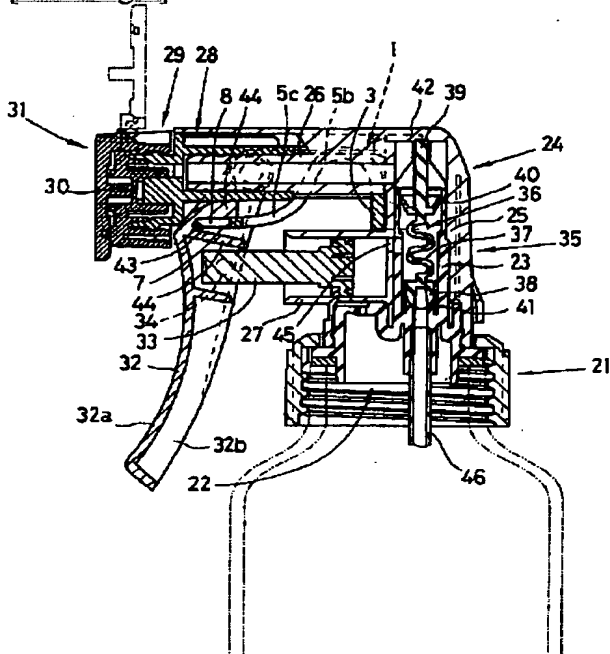
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DRAWINGS

[Drawing 1]



[Drawing 2]



[Translation done.]

(19)



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(72) Inventor:
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(54) **URGING SPRING MEMBER WITH TRIGGER OF
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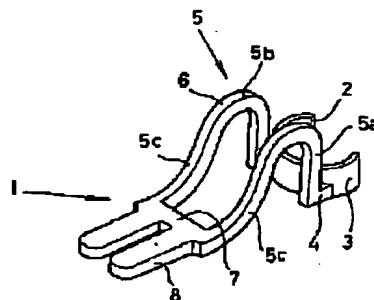
with an elastic synthetic resin.

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(57) Abstract:

PROBLEM TO BE SOLVED: To urge a plunger forward through a trigger by protruding spring plates which bend vertically from an elastic semi-cylindrical holding plate in which a rear part is opened in a C-shape in a plane view forward in parallel in the plane view at proper intervals and molding the entire body with an elastic synthetic resin integrally.

SOLUTION: Each base part 5a of a spring plate 5 is erected from both right and left sides of an elastic semicylindrical holding plate 3 in which a rear part is opened 2 in a C-shape in a plane view through a forward protruded rod part 4, and each intermediate part 5b of the plate 5 extending from both base parts 5a is formed in a pair of large curved parts 6 extending upper-forward. Moreover, each spring plate end 5c is protruded with an upper surface slightly curved in a recessed shape lower-forward from the ends of both curved parts 6, both spring plate ends 5c are connected by an interval holding plate 7, a pair of blocking plates 8 for trigger-blocking is protruded forward from the front of the plate 7, and the entire body is molded integrally



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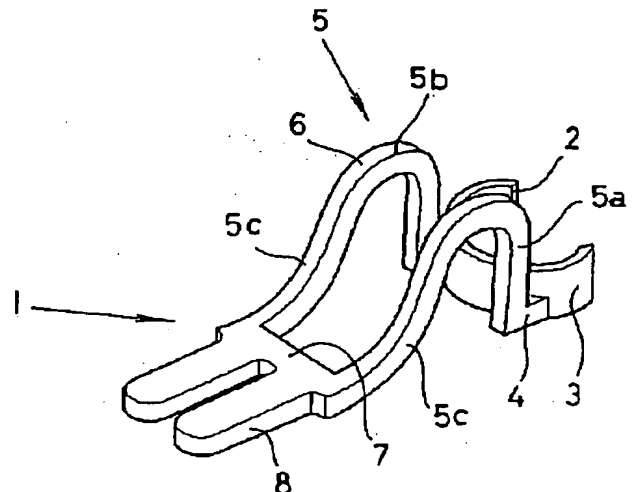
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(54) 【発明の名称】 トリガー式液体噴出器のトリガー付勢用バネ部材

(57) 【要約】

【課題】 トリガー式液体噴出器に使用されていたプランジャ付勢用のコイルスプリングに代る、合成樹脂製のバネ部材を提案して、廃棄後再溶融等して資源として再利用できる、全構成部材合成樹脂製の液体噴出器に使用できるよう設けた。

【解決手段】 平面で見てC字形状に、後部を開口2する弾性半筒状保持板3から、上下に屈曲するバネ板5、5を適当間隙を隔てて平面ほぼ平行に前方突出し、全体を合成樹脂材で一体成形した。



【特許請求の範囲】

【請求項 1】 平面視 C 字形状に、後部を開口 2 する弾性半筒状保持板 3 から上下に屈曲するバネ板 5、5 を、適当間隙を隔てて平面視ほぼ平行に前方突出し、全体を弾性に富む合成樹脂材で一体成形したことを特徴とする、トリガー式液体噴出器のトリガー付勢用バネ部材。

【請求項 2】 弾性半筒状挟持板 3 前壁部分の左右両側から、前方突出棒部 4、4 を介してバネ板 5、5 の基部 5a、5a を立設すると共に、これ等両基部から延出するバネ板中間部 5b、5b を、上前方へ張出す大湾曲部 6、6 に形成し、更にこれ等両大湾曲部先端から下前方へ、上面を凹状に多少湾曲させてバネ板先端部 5c、5c を突出し、又それ等両バネ板前端間を間隔保持板 7 で連結すると共に、該間隔保持板 7 前面からトリガー係合用の係合板 8 を前方突出したことを特徴とする請求項 1 記載のトリガー式液体噴出器のトリガー付勢用バネ部材。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】

【0002】

【従来の技術】 トリガー式の液体噴出器は、一般に容器体口頸部へ嵌合させる装着筒上部内から垂直筒を起立し、該垂直筒上端から射出筒を、かつ中間部からシリンダを、それぞれ前方突出し、上記射出筒前部から前後方向へ揺動可能に垂設したトリガーの上方後部に、上記シリンダ内へ前方付勢させて嵌合させたプランジヤ前端部を係止し、トリガーの揺動操作で容器体内液体をシリンダ内へ吸込み、かつ該シリンダ内液体を射出筒前端的ノズルから噴出するよう設けている。

【0003】 従来上記プランジヤの前方付勢はシリンダ内へ装着させた金属製のコイルスプリングで行っていた。

【0004】

【発明が解決しようとする課題】 近時、廃棄物の増大に伴って廃棄物を資源として再活用することが求められているが、一般に物品は材質を異にする複数の部材を組合せて形成されており、このような物品は材質毎に分解することが困難であるため、資源としての再活用が困難である。

【0005】 上記液体噴出器の場合、コイルスプリング以外の部材は吸込み弁および吐出弁に使用する玉弁の玉を除いて合成樹脂材で成形されており、又上記両弁も玉弁以外の弁が公知であるから、金属製のコイルスプリングをそのまま合成樹脂製とすればよい筈であるが、金属と合成樹脂とでは弾性に著しい差異があるため、弾性が不足する。

【0006】 本発明は、従来シリンダ内に装着させて直接プランジヤを前方付勢させていたコイルスプリングに代えて、トリガーとプランジヤとを連結し、トリガーを

介してプランジヤを前方付勢させることで、従来とほぼ同様の前方付勢力を有する合成樹脂製のバネ部材を得たものである。

【0007】

【課題を解決するための手段】 第 1 の手段として、平面視 C 字形状に、後部を開口 2 する弾性半筒状保持板 3 から上下に屈曲するバネ板 5、5 を、適当間隙を隔てて平面視ほぼ平行に前方突出し、全体を弾性に富む合成樹脂材で一体成形した。

【0008】 第 2 の手段として、上記第 1 の手段を有すると共に弾性半筒状挟持板 3 前壁部分の左右両側から、前方突出棒部 4、4 を介してバネ板 5、5 の基部 5a、5a を立設すると共に、これ等両基部から延出するバネ板中間部 5b、5b を、上前方へ張出す大湾曲部 6、6 に形成し、更にこれ等両大湾曲部先端から下前方へ、上面を凹状に多少湾曲させてバネ板先端部 5c、5c を突出し、

【0009】 又それ等両バネ板前端間を間隔保持板 7 で連結すると共に、該間隔保持板 7 前面からトリガー係合用の係合板 8 を前方突出した。

20 【0010】

【発明の実施の形態】 1 は本発明に係る、トリガー式液体噴出器のトリガー付勢用のバネ部材の全体を示す。該バネ部材は図 1 が示すように、平面でみて C 字形状に、後部を開口 2 する弾性半筒状保持板 3 を有する。該半筒状保持板は図 2 が示すように、トリガー式液体噴出器のシリンダ 27 と射出筒 26 との間の垂直筒 35 前半部外面へ嵌合させるもので、その開口 2 の横巾は垂直筒 35 の外径よりも多少短かく、つまりその開口を垂直筒外面へ当て、そのまま垂直筒 35 に押付けることで半筒状保持板 3 を弾性変形させて垂直筒 35 の前半部外面へ嵌合できるよう設ける。

【0011】 上記半筒状保持板 3 前壁部分の左右両側からは、前方突出棒部 4、4 を介してバネ板 5、5 の基部 5a、5a を上方へ起立し、又これ等両基部から延出するバネ板中間部 5b、5b を、上前方へ張出す大湾曲部 6、6 に形成し、更にこれ等両大湾曲部の先端から下前方へ、上面が凹状となるよう多少湾曲させてバネ板先端部 5c、5c を突出し、又それ等バネ板前端間を間隔保持板 7 で連結し、該間隔保持板前面から、トリガー係合用の係合板 8 を前方へ突出している。

【0012】 バネ板 5、5 は、平面でみてほぼ平行に前方突出するものとなし、又そのバネ板間の間隙は、図 2 が示すようにその大湾曲部 6、6 間へトリガー式液体噴出器の射出筒 26 を遊挿可能に設ける。又上記係合板 8 は、トリガー 32 の上方後部へ係止可能とするもので、トリガー前壁 32a の左右両側から後方突設する側壁 32b、32b 間へ嵌合させることが可能とする。尚図示例では係合板 8 を、間隔保持板 7 前面の左右両側から二本平行に突出して形成しているが、一枚板で形成しても差支えない。

【0013】バネ板 5, 5 が適当な強度を有すれば、上記間隔保持板および係合板は省略してもよく、又半筒状保持板から突出するバネ板形状も適宜変更することが出来る。

【0014】図 2 は、既述バネ部材 1 を装着させたトリガー式液体噴出器を示す。該液体噴出器について簡単に説明すると、21 は容器体口頸部に螺合等して嵌合させる装着筒、22 はその装着筒の上部内面から起立する噴出器本体取付け部材で、噴出器本体の外垂直筒内面へ嵌合させる内垂直筒 23 を起立する。

【0015】24 は噴出器本体で、上記内垂直筒外面へ嵌合させた外垂直筒 25 上端からは射出筒 26 が、又外垂直筒下部からはシリンダ 27 が、それぞれ前方へ突出している。射出筒 26 前部にはノズルヘッド取付筒 28 を嵌合させ、該取付筒前部にはノズル孔 30 付きのノズルヘッド 29 を嵌合させている。尚該ノズルヘッド 29 はノズル孔 30 を開閉する蓋板付き部材 31 を有する。

【0016】射出筒 26 前部からは、前後方向への揺動が自在にトリガー 32 が斜下前方へ垂下させてあり、又該トリガーの上方後部には、上記シリンダ内へ後部を嵌合させて前方突出するプランジャ 33 前部を枢着させている。

【0017】内外二重筒に形成した垂直筒 35 内には弁部材 36 を装着させる。該弁部材は波板断面形状に屈曲部を連続する板バネ 37 下端に吸込み弁体 38 を、又板バネ上端から係合棒 39 を起立して、該係合棒下部から外向きフランジ状壁を介して上外方へ逆スカート状の弾性筒としての吐出弁体 40 を起立して、合成樹脂材で一体成形したもので、吸込み弁体 38 下面を垂直筒 35 の下部内面に設けた吸込み弁座 41 へ、又係合棒 39 上端を垂直筒上面を閉塞する上壁 42 下面へ、それぞれ圧接させている。

【0018】本発明のバネ部材 1 は、内外両垂直筒が形成する垂直筒 35 が、シリンダ 27 と射出筒 26 間に有する間隙部分の前半部分へ弾性半筒状保持板 3 を嵌合させ、バネ板 5, 5 を前方突出させてトリガー 32 の上部後面に設けた後面開口の凹部 43 内へ係止させる。該凹部は図示例において、トリガー前壁 32a と該前壁の左右両側から後方突出させた側壁 32b, 32b と、それ等側壁間に横設した上下のリブ 44, 44 とで形成している。

【0019】図 2 が示す状態からトリガー 32 を引寄せると、シリンダ 27 内の高圧化でシリンダ後壁に設けた透孔 45 を通って垂直筒 35 内に入った液体は、吐出弁体 40 を弾性変形させることで射出筒 26 内へ入り、ノズル孔 30 から噴出する。トリガー 32 を離すと、バネ板 5, 5 の復元によりトリガー 32 およびプランジャ 33 が元の位置へ復元することとなり、このとき高圧状態解消により弾性吐出弁体 40 はその上端外周部を垂直筒 35 内面へ圧接して吐出弁

を閉じているため、シリンダ 27 内は負圧化することとなり、該負圧化により吸込み弁孔を閉塞している吸込み弁体 38 は中間バネ板の弾性に抗して押上げられ、すると吸上げパイプ 46 を通って容器体内液体がシリンダ 27 内へ入り、次のトリガー引寄せ操作による液体噴出に備える。

【0020】

【発明の効果】本発明は既述構成とするものであり、請求項 1 記載のバネ部材は、平面でみて C 字形状に、後部を開口 2 する弾性半筒状保持板 3 を有するから、該半筒状保持板をトリガー式液体噴出器の垂直筒 35 外面へその開口 2 を当て、そのまま押付けるだけでその半筒状保持板 3 が弾性変形して垂直筒 35 外面へ嵌合させることが出来、又その半筒状保持板 3 から上下に屈曲するバネ板 5, 5 を、適宜間隙を隔てて平面でみてほぼ平行に前方突出したから、そのバネ板 5, 5 の間隙内へ射出筒 26 を遊挿させてバネ板前端をトリガー 32 の上部後面に設けた凹部 43 内へ係止させることが出来、このようにしてバネ部材 1 を合成樹脂材で形成したに拘らず、バネ板 5, 5 の長さ、および弾性を大として、トリガー 32 を介してプランジャ 33 を前方付勢させることが出来る。

【0021】請求項 2 記載のバネ部材は、上記請求項 1 記載のバネ部材が有する効果を併せ有すると共に、上記半筒状保持板 3 の前壁部分の左右両側から、前方突出棒部 4, 4 を介してバネ板基部 5a, 5a を立設し、これ等両基部から延出するバネ板中間部 5b, 5b を、上前方へ張出す大湾曲部 6, 6 に、更に該大湾曲部先端から上面を多少湾曲させてバネ板先端部 5c, 5c を突出したから、トリガー引寄せによりバネ板 5, 5 はその全体をほぼ均等に弾性変形させることとなり、トリガー 32 を介してプランジャ 33 を前方付勢させることの可能な弾性が容易に得られる。又バネ板前端間を間隔保持板 7 で連結すると共に該間隔保持板前面からトリガー係合用の係合板 8 を突出したから、両バネ板 5, 5 は常に同時に弾性変形することとなって、その弾性を高めると共にトリガー式液体噴出器に対するバネ部材 1 の装着も容易に行うことが出来る。

【図面の簡単な説明】

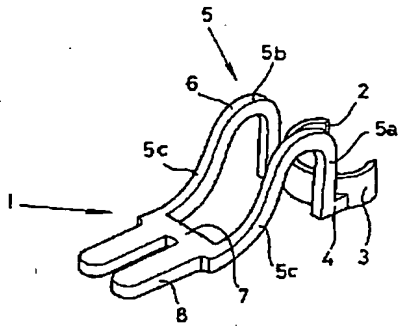
【図 1】 本発明に係るバネ部材の斜視図である。

【図 2】 図 1 バネ部材を使用する、トリガー式液体噴出器の断面図である。

【符号の説明】

1 … バネ部材	3 … 半筒状保持板	5 … バネ板
6 … 大湾曲部	24 … 噴出器本体	32 … トリガー
35 … 垂直筒		

【図 1】



【図 2】

